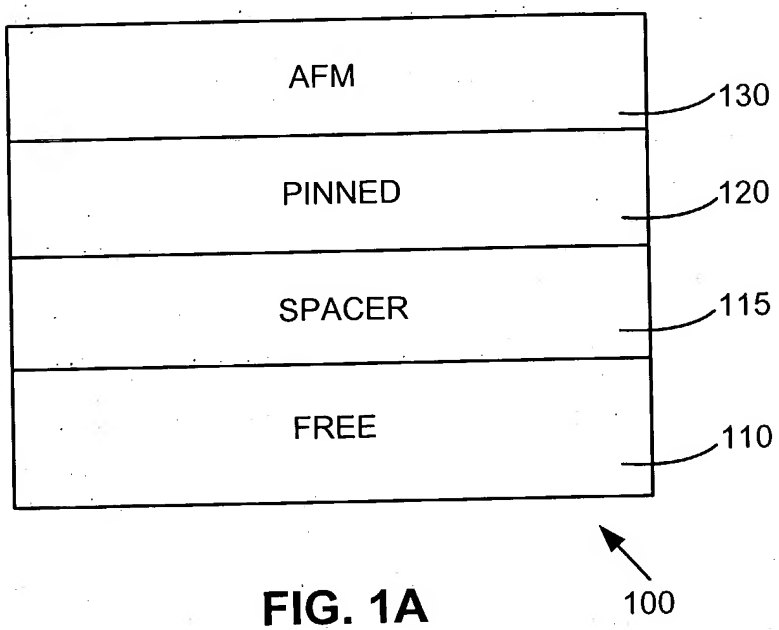
AFM
130
PINNED
120
SPACER
115
FREE
110
100

FIG. 1A

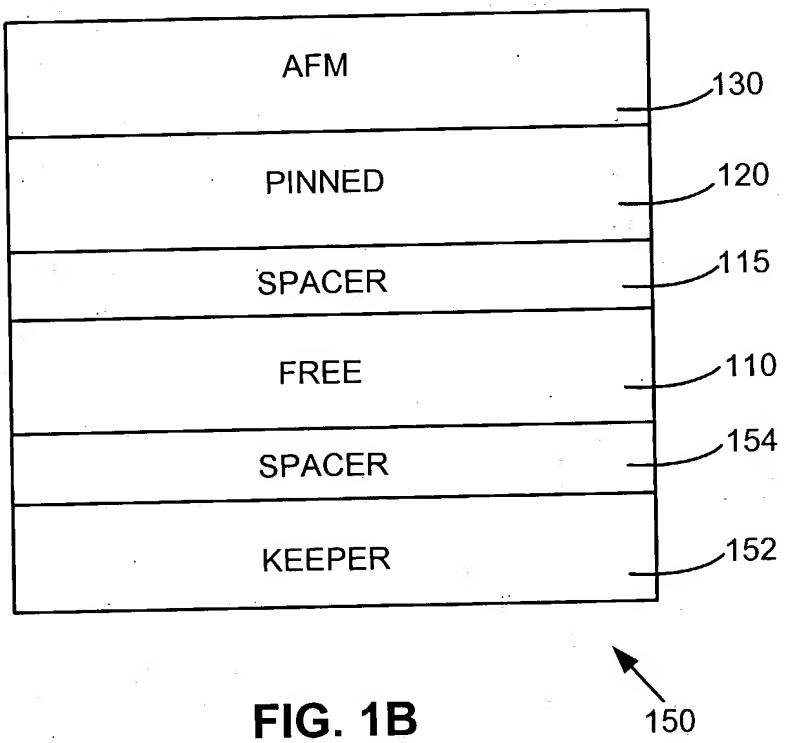
AFM
130
PINNED
120
SPACER
115
FREE
110
SPACER
154
KEEPER
152
150

FIG. 1B

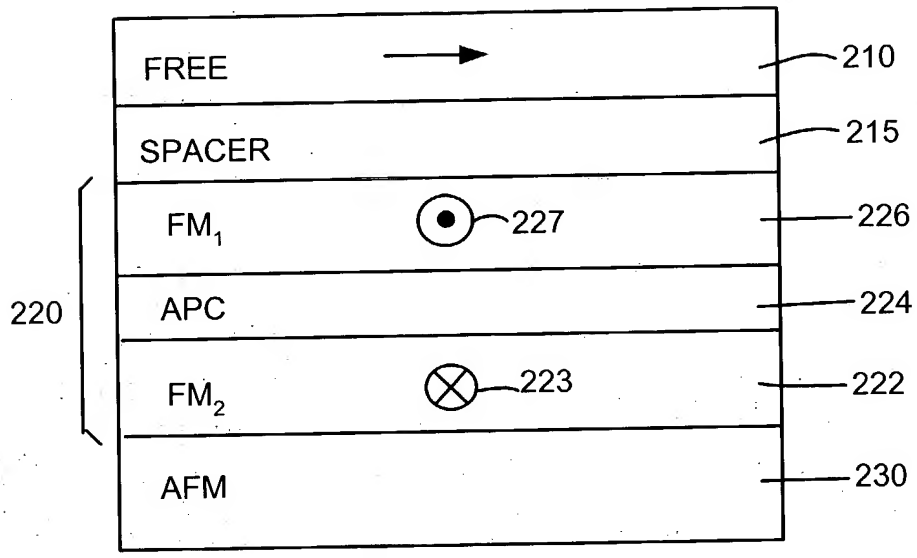
FREE
SPACER
FM1
227
APC
FM2
223
AFM
210
215
226
224
222
230
220
200

FIG. 2A

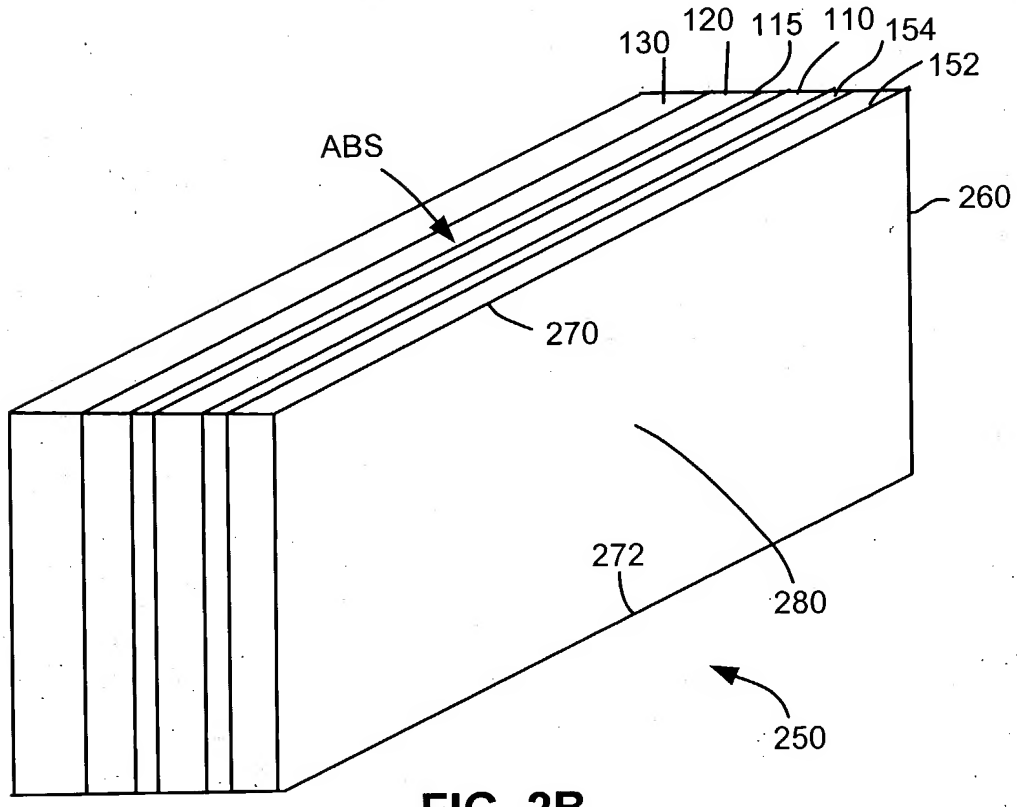
130
120
115
110
154
152
ABS
260
270
272
280
250

FIG. 2B

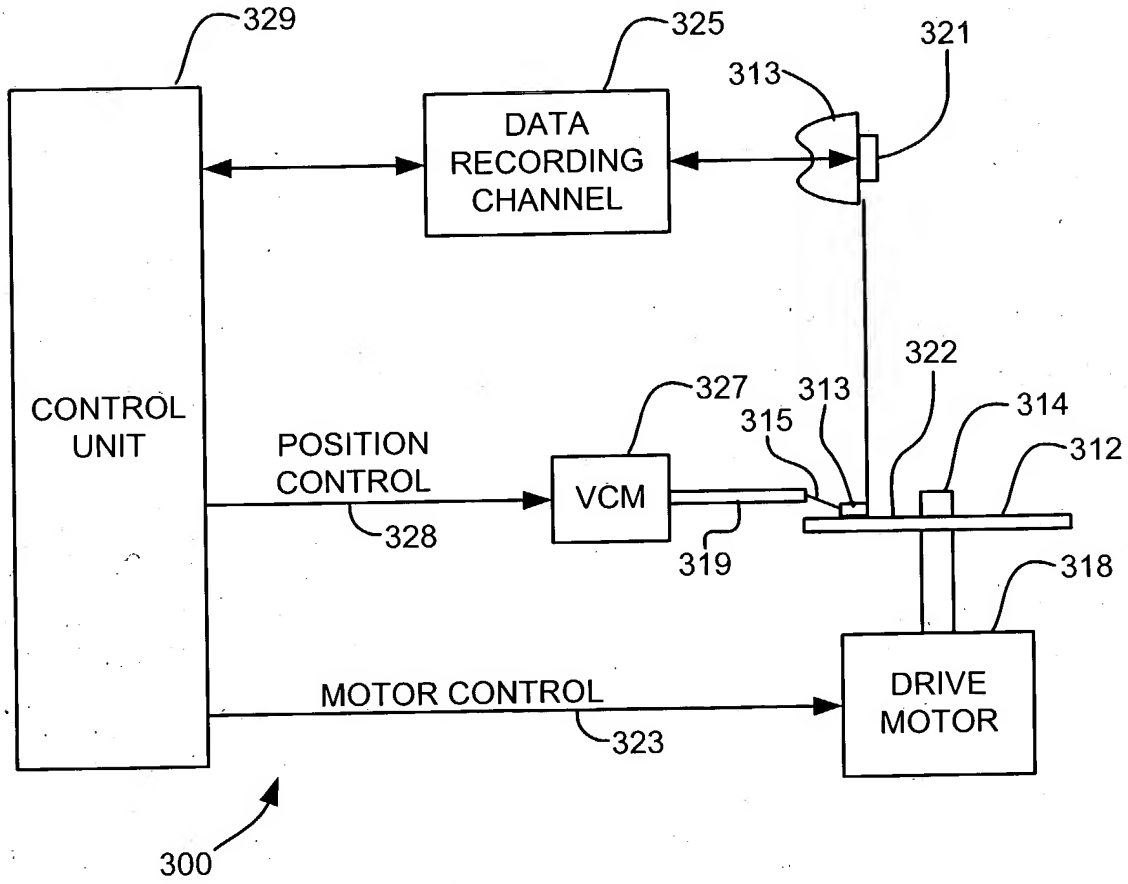
329
325
321
313
DATA
RECORDING
CHANNEL
CONTROL
UNIT
POSITION
CONTROL
328
327
313
315
322
314
312
VCM
319
318
DRIVE
MOTOR
MOTOR CONTROL
323
300

FIG. 3

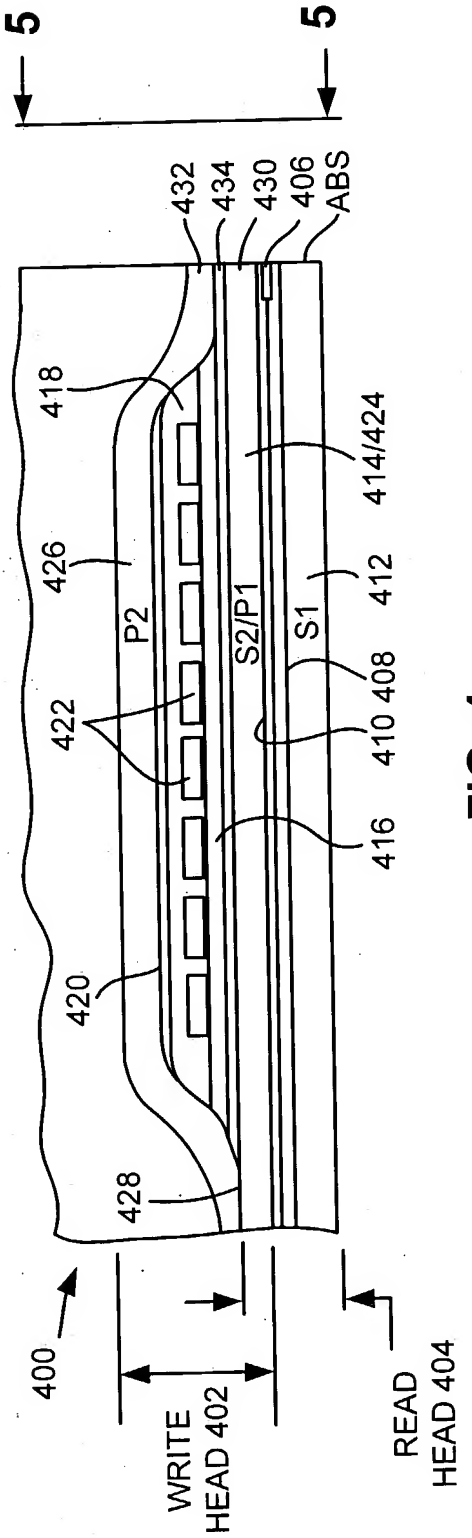
5
5
432
434
430
406
ABS
418
414/424
426
P2
S2/P1
S1
412
422
408
410
416
420
428
400
WRITE HEAD 402
READ HEAD 404

FIG. 4

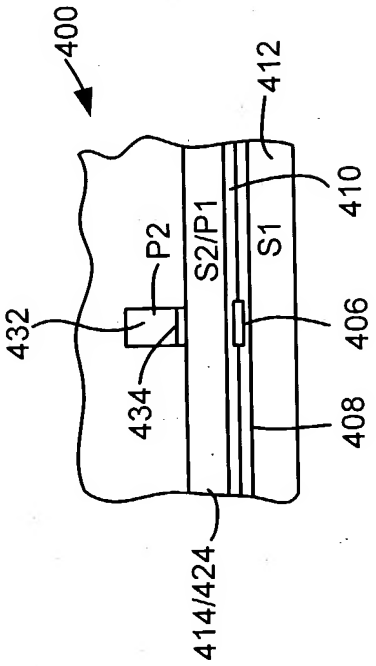
400
412
410
P2
S2/P1
S1
432
406
434
408
414/424

FIG. 5

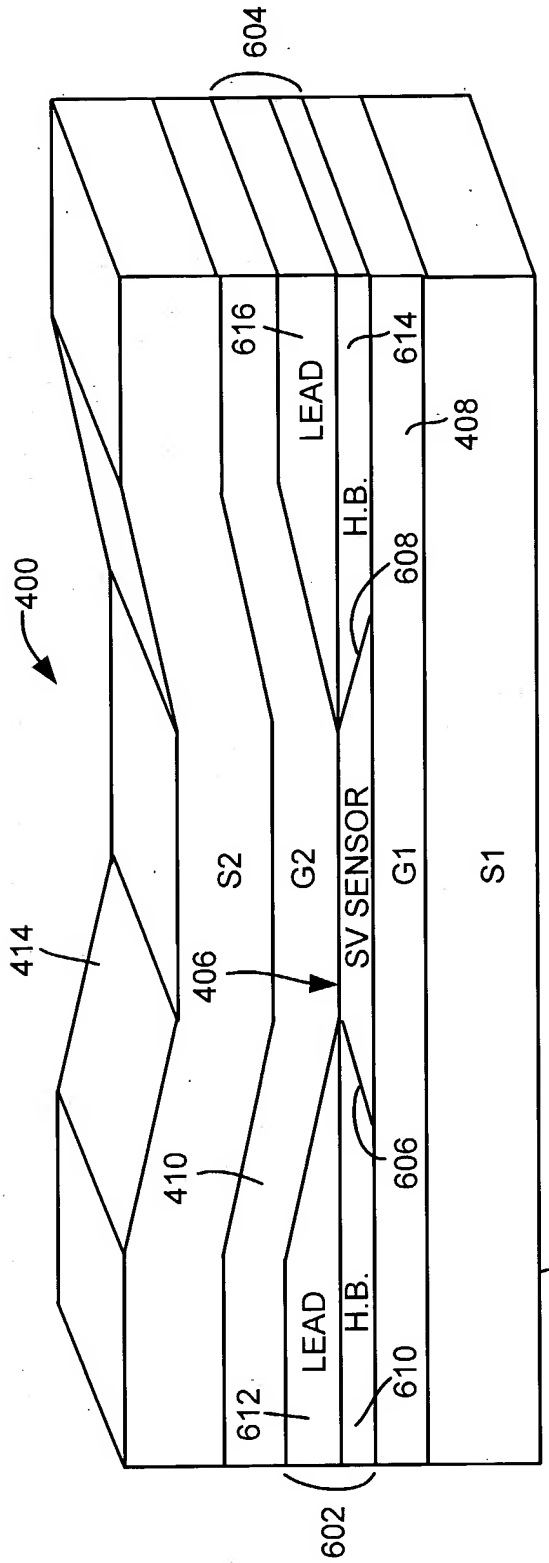
604
616
LEAD
614
408
H.B.
608
400
S2
G2
SV SENSOR
G1
S1
414
406
410
606
412
LEAD
H.B.
610
612
602

FIG. 6

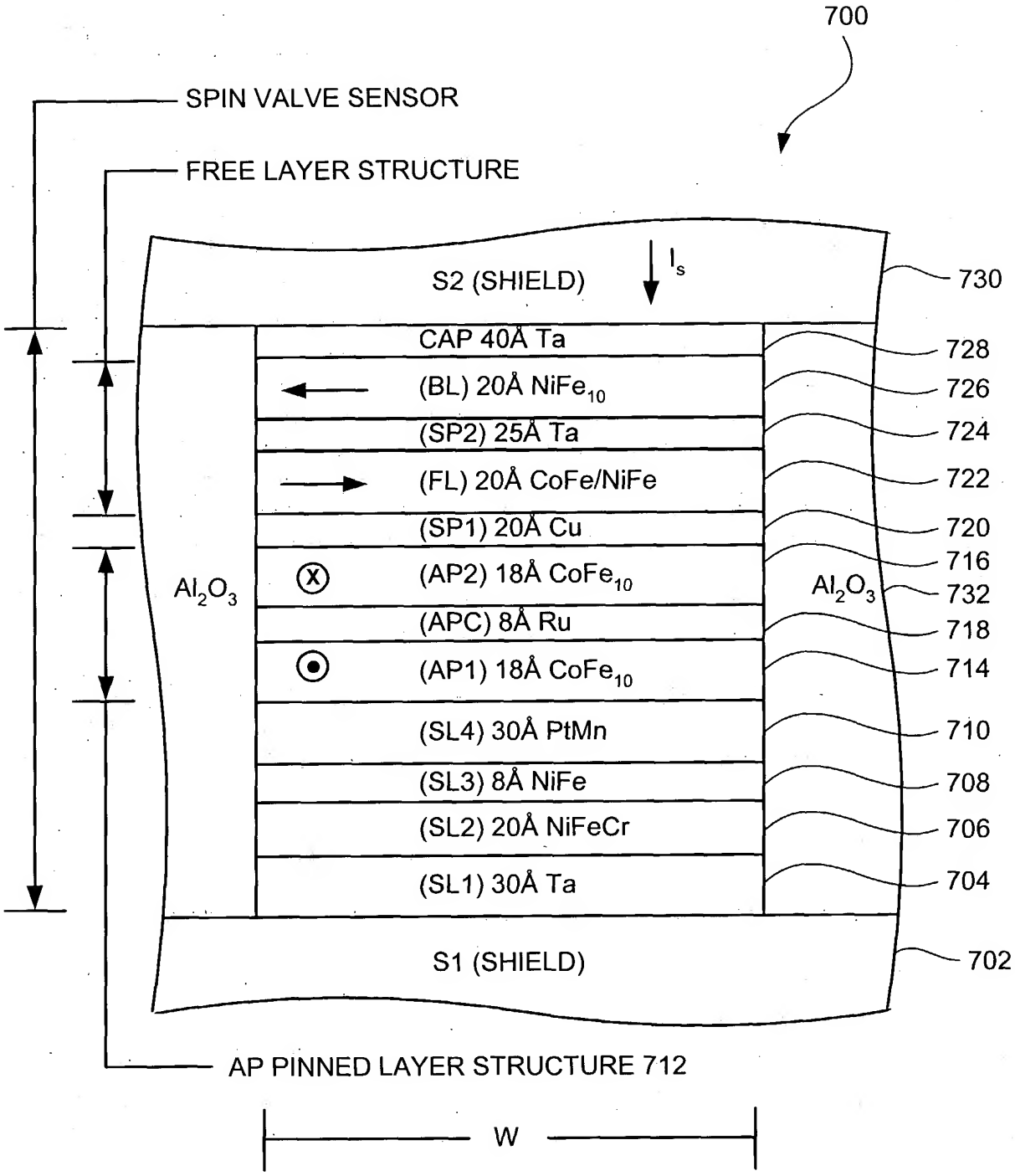
700
SPIN VALVE SENSOR
FREE LAYER STRUCTURE
S2 (SHIELD)
I_s
730
CAP 40Å Ta
728
(BL) 20Å $NiFe_{10}$
726
(SP2) 25Å Ta
724
(FL) 20Å CoFe/NiFe
722
(SP1) 20Å Cu
720
(AP2) 18Å $CoFe_{10}$
716
Al_2O_3
Al_2O_3
732
(APC) 8Å Ru
718
(AP1) 18Å $CoFe_{10}$
714
(SL4) 30Å PtMn
710
(SL3) 8Å NiFe
708
(SL2) 20Å NiFeCr
706
(SL1) 30Å Ta
704
S1 (SHIELD)
702
AP PINNED LAYER STRUCTURE 712
W

FIG. 7

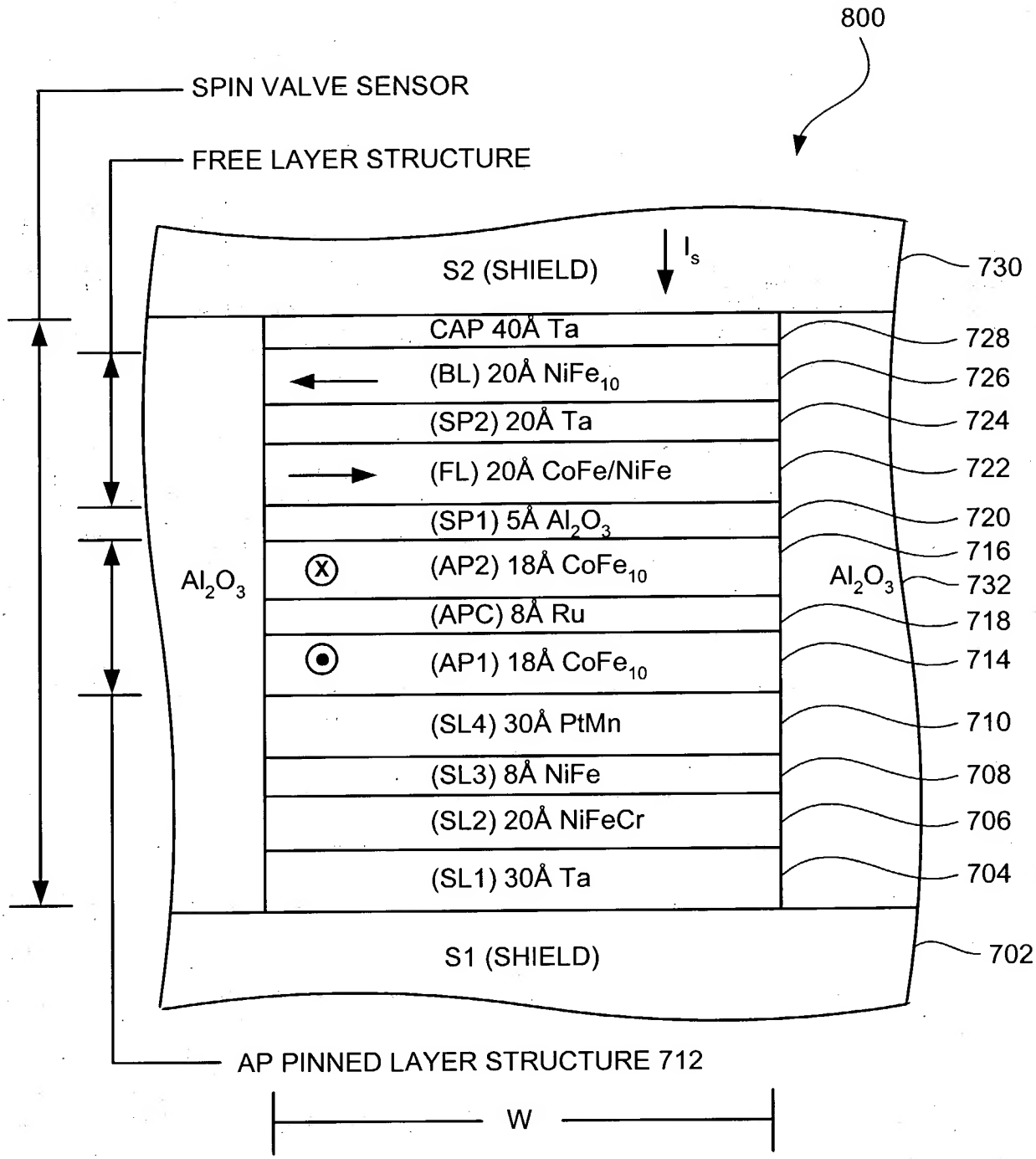
800
SPIN VALVE SENSOR
FREE LAYER STRUCTURE
S2 (SHIELD)
I_s
730
CAP 40Å Ta
728
(BL) 20Å $NiFe_{10}$
726
(SP2) 20Å Ta
724
(FL) 20Å CoFe/NiFe
722
(SP1) 5Å Al_2O_3
720
(AP2) 18Å $CoFe_{10}$
716
Al_2O_3
Al_2O_3
732
(APC) 8Å Ru
718
(AP1) 18Å $CoFe_{10}$
714
(SL4) 30Å PtMn
710
(SL3) 8Å NiFe
708
(SL2) 20Å NiFeCr
706
(SL1) 30Å Ta
704
S1 (SHIELD)
702
AP PINNED LAYER STRUCTURE 712
W

FIG. 8

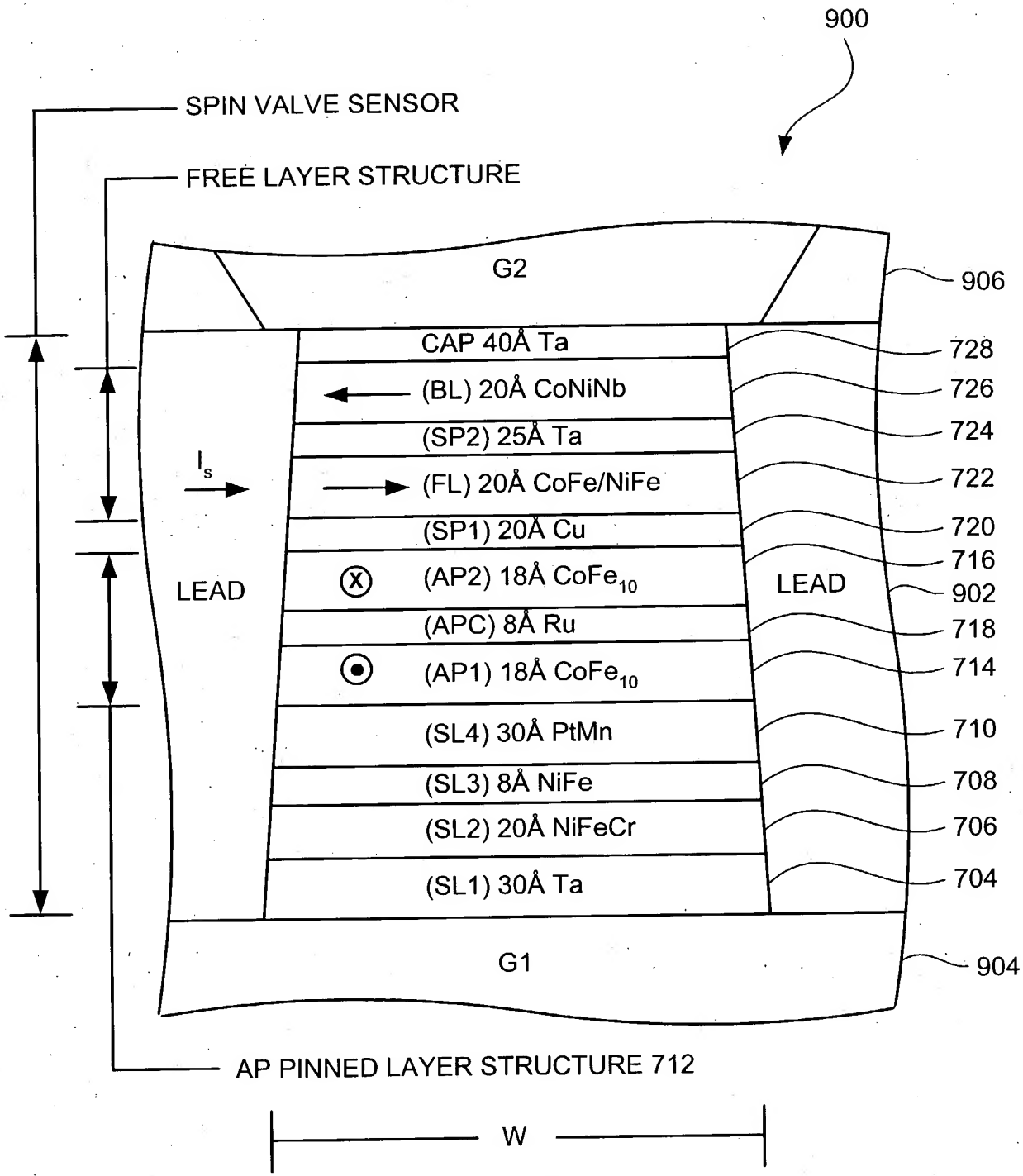
900
SPIN VALVE SENSOR
FREE LAYER STRUCTURE
G2
906
CAP 40Å Ta
728
(BL) 20Å CoNiNb
726
(SP2) 25Å Ta
724
I_s
(FL) 20Å CoFe/NiFe
722
(SP1) 20Å Cu
720
716
LEAD
(AP2) 18Å $CoFe_{10}$
LEAD
902
(APC) 8Å Ru
718
(AP1) 18Å $CoFe_{10}$
714
(SL4) 30Å PtMn
710
(SL3) 8Å NiFe
708
(SL2) 20Å NiFeCr
706
(SL1) 30Å Ta
704
G1
904
AP PINNED LAYER STRUCTURE 712
W

FIG. 9